

REMARKS

Please reconsider the application in view of the following remarks. Applicant thanks the Examiner for carefully considering this application and for indicating that claim 5 contains allowable subject matter.

Disposition of Claims

Claims 1-16 were pending in the present application. By way of this reply, claims 17-22 have been added, and claims 1, 4, and 15 have been cancelled without prejudice or disclaimer. Accordingly, claims 2-3, 5-14, and 16-22 are now pending in this application. Further, claims 3, 5, 7, 10, and 16 are independent. The remaining claims depend, directly or indirectly, from claims 3, 5, 7, and 10.

Allowable Subject Matter

Claim 5 is objected to as being dependent upon rejected base claims 1 and 4, but would be allowable if rewritten in independent form. As discussed above, claims 1 and 4 have been cancelled and thus, claim 5 has been rewritten into independent form to include limitations of cancelled claims 1 and 4. Accordingly, independent claim 5, as amended, is now allowable. Further, claims 2 and new claims 17-18 depend directly from independent claim 5 and thus, are also allowable.

Claim Amendments

Claims 2-3 and 5-13 have been amended by this reply to remove reference numerals. Further, new claims 17-22 have been added, and claims 1, 4, and 15 have been cancelled by this reply without prejudice or disclaimer. As discussed above, claim 5 has been rewritten into

independent form to include limitations of cancelled claims 1 and 4. In addition, claim 16 has been rewritten into independent form to include limitations of cancelled claim 15. Claims 3, 7, and 10 have been rewritten into independent form to include limitations of cancelled claim 1. Accordingly, claims 6 and 12-13 have been amended to depend from independent claim 3. Claim 2 has been amended to depend from independent claim 5. Claim 8 has been amended to depend from claim 7. New claims 17-18 correspond to claims 12-13, respectively, and depend from independent claim 5. New claims 19-20 correspond to claims 12-13, respectively, and depend from independent claim 7. New claims 21-22 correspond to claims 12-13, respectively, and depend from independent claim 10. No new subject matter has been added by way of these amendments, as support for these amendments is present, for example, in the original claims.

Claim Objections

The claims are objected to because they include reference numerals. As discussed above, claims 1, 4, and 15 have been cancelled by this reply rendering the objections moot with respect to claims 1, 4, and 15. Accordingly, claims 2-3 and 5-13 have been amended to remove all reference numerals.

Moreover, claims 3-6 were objected to because of minor informalities. As discussed above, claim 4 has been cancelled by this reply rendering the objection moot with respect to claim 4. Further, claims 3 and 5-6 have been amended to correct the informalities indicated by the Examiner. Thus, withdrawal of these objections is respectfully requested.

Rejection(s) under 35 U.S.C § 102

Claims 1-3, 6-8, and 12-16 stand rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,340,319 ("Enomoto"). As discussed previously, claims 1 and 15 have been

cancelled, rendering the rejection moot with respect to claims 1 and 15. Claim 5 has been amended into independent form. The Examiner acknowledges that claim 5 is allowable over Enomoto (see Office Action mailed August 3, 2006 at p. 8). Claim 2 has been amended to depend from claim 5. Therefore, Applicant respectfully submits that amended claim 2 is patentable over Enomoto for at least the same reasons as claim 5. To the extent that this rejection applies to the remaining amended claims, the rejection is respectfully traversed.

In one example of an embodiment of the claimed invention, Figure 1 of the present specification shows an electrical connector (1) configured to interlink two superimposed electronic circuits. The connector (1) may assume 2 positions, the pre-mounting position (*i.e.*, when the circuits are *not* interlinked by the electric connector as shown in Figure 2), and the mounting position (*i.e.*, when the circuits *are* interlinked by the electric connector as shown in Figure 3). The connector (1) includes a base (10), a guide (11), and a plurality of plugs that may comprise a rectangular shape where one end of plug (4) also includes a foot (8) extending perpendicular to the plug (4) (*e.g.* an “L” shape). To that end, when inserting a plug (4) upwards through an aperture (18) of base (10), the foot (8) of the plug (4) remains below the base (10). In one or more embodiments of the claimed invention, the plugs (4) ensure an electrical link between designated areas on the electronic circuits to facilitate information flow from one circuit to another.

Further, connector (1) may include posts (14) that project from base (10) higher than plugs (4). Further, one or more posts (14) may include a short projection (114). In this embodiment, the short projection (114) may function as a blocking mechanism, such that when guide (11) is inserted over posts (14) and plugs (4), the *short projections block the guide (11) from descending past a predetermined point*. In other words, a gap (J) (*e.g.* Figure 3) is sustained between guide (11) and base (10) while guide (11) is resting on the short projections

(114). Thus, the *free ends of the plugs (4) are encased in the guide which may eliminate the risk of bent plugs (4)*, and the *connector is now in the pre-mounting position (i.e., prior to mounting of a first circuit and a second circuit)*.

After the connector (1) is placed in the pre-mounting position, the base (10) may be snapped onto the first circuit by a set of protruding pins (16) and the foots (8) of the plugs (4) may be soldered onto the first circuit's electric contact areas. Advantageously, the *increased surface area of one or more foots (8) may provide better electrical contact with an electric area*, thereby *providing a secure connection with the first circuit*. Moreover, the second circuit may be mounted over posts (14) through holes (22) atop guide (11). Subsequently, constant pressure may be exerted on the second circuit causing free ends of plugs (4) to protrude over guide (11) and pass into holes (9) in the second circuit. Said another way, the pressure exerted causes the guide to pass over the short projections (114) such that the distance (J) reduces and free ends of plugs (4) protrude over guide (11) for contact with second circuit. Accordingly, the connector (1) is now in the mounting position. (see Published Specification, FIG. 1-3 and accompanying text).

Turning to the rejection, "a claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). (See MPEP § 2131). The Applicant respectfully asserts that Enomoto fails to disclose all the limitations of amended independent claims 3, 7, and 16.

In particular, amended independent claim 3 recites, *inter alia*, "...electrical connector for interlinking two superimposed electronic circuits comprising...a guiding means attached thereto and located between the guide and the base, wherein at least some of the plugs project from the base so that the free end of each one can fit into and slide in a housing passing through the guide,

wherein the guiding means comprises a projecting first part attached to the base and an additional second part mounted on the first part and attached to the guide; and *wherein the plugs are fitted into associated housings passing through the guide, while a tighter sliding assembly is located between the two parts of the guiding means.*” The aforementioned limitations explicitly require that when the first part (e.g., post) of the guiding means is inserted into the second part (e.g., hole) of the guide, the first part fits into the second part with a tighter fit using a sliding assembly as compared to the plugs fitted into their associated housings. Enomoto is completely silent with respect to at least the aforementioned limitation as required by amended independent claim 3.

Enomoto is directed to a connector configured to interconnect two spaced apart parallel printed circuit boards and also, designed to absorb relative positional misalignments. Specifically, Enomoto discloses an electric connector that utilizes a plurality of needle-like pin terminals disposed between an upper and lower wafer. Further, the upper and lower wafers are secured together by tie-rods. However, Enomoto is completely silent with respect to a tighter sliding assembly between the tie rod and the apertures compared to the pin terminals.

In particular, it appears from Figures 4 and 6 of Enomoto, that the “tightness” with which the tie-rod (5A) and pin terminals (4) fit into their corresponding openings is equivalent. Specifically, referring to Figure 4 of Enomoto, each end of tie rod (5A) is shown inserted into openings (22, 23) in-between the upper and lower wafers (2, 3), respectively. Clearly, a gap does not exist between the openings (22, 23) and tie-rod (5A). Moreover, the openings (22, 23) diverge into annular gaps giving the tie rod (5A) space to bend at different angles facilitating misaligned wafers. Similarly, the needle-like pin terminals (4) are disposed between the upper and lower wafers through openings (11, 12), respectively. These openings (11, 12) also fail to provide a gap for the pin terminal (4) to shift horizontally without bending.

Further, the annular gap (*e.g.*, Enomoto, Figure 4) giving tie rod (5A) bending room appears to be much wider than the annular gap around the pin terminals (4), thus, the pin terminals (4) appear to have a tighter fit than the tie rods (*i.e.*, opposite to the limitations of claim 3 set forth above). Moreover, the Examiner admits on page 4 of the present Office Action that “Figure 6 of Enomoto shows no gap in housing (12),” solidifying that pin terminal (4) *must* fit tightly, and thus, cannot maintain a looser fit than the tie rod. Thus, Enomoto fails to disclose that plugs are fitted into associated housings passing through the guide, while *a tighter sliding assembly is located between the two parts of the guiding means* as required by amended independent claim 3.

Further, amended independent claim 7 requires, *inter alia*, “...electrical connector for interlinking two superimposed electronic circuits comprising... a guiding means attached thereto and located between the guide and the base, wherein the guiding means comprises a projecting first part attached to the base and an additional second part mounted on the first part and attached to the guide; and *wherein the first part of the guiding means comprises posts each of which fits tightly so as to slide through an additional hole made in the guide* and comprising the second part of the guiding means.” The aforementioned limitations explicitly require that the guiding means include a post and a hole, such that the post fits tightly in the hole as it slides through. Enomoto is completely silent with respect to at least the aforementioned limitation as required by amended independent claim 7.

As discussed previously, Enomoto discloses a tie-rod which fits into an aperture with a lower annular gap giving the tie-rod space to bend instead of space to shift horizontally. The Examiner equates the additional hole and the guide recited in claim 7 to an opening and upper wafer as disclosed by Enomoto (*see* Office Action mailed on August 3, 2006 at p. 4). In view of the aforementioned citation, it is noted that the tie rod may fit tightly in the opening, but it only

sits tightly in the hole (*i.e.*, rod fails to slide tightly all the way to the top past the upper wafer). Rather, Enomoto discloses that the tie rod is halted by the aperture's end. In contrast, the claimed invention as recited in claim 7 requires that the post tightly slides through the guide (*e.g.*, all the way through the guide and above the guide). Thus, Enomoto is completely silent with respect to the first part of the guiding means comprising posts each of which *fits tightly so as to slide through an additional hole made in the guide* as required by amended independent claim 7.

Finally, amended independent claim 16 recites, *inter alia*, “a method for mounting an electrical connector for interlinking two superimposed electronic circuits, the electrical connector comprising...electrically conducting plugs;...a base;... a guide; and a guiding means attached thereto and located between the guide and the base, wherein the guide is intended to occupy *a premounting position whereby the guide covers the free ends of the plugs and a mounting position whereby the free ends of the plugs are uncovered*; and wherein means are contemplated for maintaining the guide in its premounting position.” The aforementioned limitations explicitly require that the *electrical connector occupy a premounting position (e.g. before the circuits are mounted) and a mounting position*. Enomoto is completely silent with respect to at least the aforementioned limitation as required by amended independent claim 16.

Specifically, the Examiner cites Figure 6 of Enomoto as disclosing the aforementioned limitation. However, the Applicant fails to see where Enomoto shows a premounting position (*i.e.* whereby the guide covers the free ends of the plugs). The Examiner equates the means contemplated for maintaining the guide in its premounting position with the pointed free end tip of tie rods (5A and 5B) of Enomoto. However, Applicant respectfully asserts that the pointed free-end tips could not possibly block the wafer (2) from descending. To that end, Figure 6 of Enomoto fails to show any mechanism for hindering descent of the wafer, and thus, fails to

illustrate *any position where the needle-like pins may be covered by the wafer before the circuits are mounted*.

Moreover, Enomoto fails to disclose a means (*e.g.*, short projections) for maintaining the guide in a premounting position. Said another way, Enomoto only discloses a single mounting position (*i.e.*, mounting of the circuits on the connector while pins are protruding above wafer). Accordingly, Enomoto fails to show any position where the free ends of the terminals are covered by the upper or even lower wafers (*i.e. no premounting position*). Thus, Enomoto is completely silent with respect to at least a premounting position or means for maintaining the guide in the premounting position as required by amended independent claim 16.

In view of the above, Enomoto fails to disclose all the limitations recited in amended independent claims 3, 5, 7, and 16. Thus, amended independent claims 3, 5, 7, and 16 are patentable over Enomoto. Further, dependant claims are patentable over Enomoto for at least the same reasons as amended independent claims 3, 5, 7. Thus, withdrawal of this rejection is respectfully requested.

Rejection(s) under 35 U.S.C § 103

Claim 4 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Enomoto in view of U.S. Patent No. 4,558,912 (“Collar”). As discussed above, claim 4 has been cancelled without prejudice or disclaimer. Thus, this rejection is now moot.

Claim 9 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Enomoto in view of U.S. Patent No. 4,173,387 (“Zell”). Claim 9 depends indirectly from independent claim 7. To the extent that the rejection applies to amended independent claim 7, the rejection is respectfully traversed.

To establish a *prima facie* case of obviousness “...the prior art reference (or references when combined) must teach or suggest all the claim limitations.” (See MPEP §2143.03). However, a *prima facie* case of obviousness may also be rebutted by showing that the art, in any material respect, teaches away from the claimed invention. *In re Geisler*, 116 F.3d 1465, 1471, 43 USPQ2d 1362, 1366 (Fed. Cir. 1997) (see MPEP §2144.05, III). The Applicant respectfully asserts that Enomoto and Zell, whether considered separately or in combination, fail to teach or suggest all the limitations of amended independent claim 7.

As discussed above, Enomoto fails to show or suggest all of the limitations of independent claim 7. Zell also fails to disclose all of the limitations of the claimed invention and fails to supply that which Enomoto lacks with respect to claim 7. This is evidenced by the fact that Zell is only relied upon to teach “pins with flanged tabs” (see Office Action mailed August 3, 2006 at p. 6). Zell is directed to a header providing a protective housing around a pin array in a printed circuit board. (see Zell, Abstract). Zell is completely silent with respect to a configuration of an electrical connector. Accordingly, amended independent claim 7 is patentable over Enomoto and Zell, whether considered separately or in combination. Claim 9 is dependent on claim 7 and is patentable for at least the same reasons.

Moreover, Enomoto actually teaches away from the claimed invention. Enomoto states that “pin-receiving openings of...wafers have...annular gaps around pin terminals...allowing the pin terminals to yieldingly bend a predetermined amount to absorb relative positional misalignments” (see Enomoto, col. 2, ll. 39-46). Clearly, from the above statement, Enomoto teaches away from a premounting position in which the plugs are protected (*e.g. protected from bending*) as the invention disclosed by Enomoto is geared toward *actually bending the pins*. In view of the above, it is improper to combine Enomoto with any cited reference to establish a

prima facie case of obviousness against the pending claims. Accordingly, withdrawal of the rejection is respectfully requested.

Claims 10-11 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Enomoto in view of Official Notice. To the extent that the rejection applies to the amended claims, the rejection is respectfully traversed.

Amended independent claim 10 recites, *inter alia*, “wherein the plugs comprise metal tabs of rectangular section with a head, comprising the free end of the tab in a penetrating shape, and a foot extending at a 90 degree angle to the plane of the tab.” The Examiner admits that Enomoto is silent with respect to a rectangular cross section shape of the plug and a foot of the tab does extending at 90 degrees to the plane of the tab. (*see* Office Action mailed August 3, 2006 at p. 7).

However, the Examiner takes Official Notice and asserts that a foot extending at a 90 degree angle is well known and expected in the art. Based on the discussion above, this assertion is incorrect. It appears that the Examiner is relying on personal knowledge clearly not present in or taught by Enomoto to form part of this rejection. To the extent that the Examiner is relying on personal knowledge as the basis of this rejection, Applicant respectfully requests that the Examiner, pursuant to 37 C.F.R. § 1.104(d)(2), supply a declaration setting forth specific factual statements and explanation to support such a finding so that these facts can be appropriately cross-examined and rebutted.

Further, the Examiner asserts it would have been obvious to modify Enomoto to have the rectangular cross section since Applicant “has presented no explanation that this particular configuration is significant” (*see* Office Action mailed on August 3, 2006 at p. 7). However, Applicant points to paragraph [0054] of the Published Specification which clearly discloses that the foot increases “the contact surface with the exposed electrical areas so that a good seating of

the connector with regard to the lower circuit is obtained.” Thus, the aforementioned limitation explicitly requires a foot which, as shown in one or more embodiments of the present invention, may necessarily need to be attached to a rectangular cross section. Accordingly, the needle like pin terminal of Enomoto could not incorporate a foot because a foot would clearly be too wide for a needle-like pin. Thus, converting the pin to a rectangular cross section would not simply “be a change in shape” as asserted by the Examiner (*see* Office Action mailed on August 3, 2006 at p. 7), but rather is a necessary inclusion to facilitate the foot.

In view of the above, it is improper to reject claim 10 over Enomoto with Official Notice to establish a *prima facie* case of obviousness. Accordingly, amended independent claim 10 is patentable over Enomoto. Dependent claim 11 is also patentable over Enomoto for at least the same reasons. Additionally, as discussed above, Enomoto actually teaches away (*e.g.*, directed to bending pins) from the claimed invention (*e.g.*, protected from bending). Accordingly, withdrawal of this rejection is respectfully requested.

New Claims

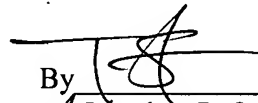
By way of this reply, new claims 17-22 have been added. As discussed previously, new claims 17-18 correspond to claims 12-13, respectively, and depend from independent claim 5. New claims 19-20 correspond to claims 12-13, respectively, and depend from independent claim 7. New claims 21-22 correspond to claims 12-13, respectively, and depend from independent claim 10. No new subject matter has been added by way of these amendments, as support for these amendments is present, for example, in the original claims. Claims 17-22 are allowable for at least the same reasons as stated above with respect to independent claims 5, 7, and 10. Accordingly, entry and allowance of new claims 17-22 is respectfully requested.

Conclusion

Applicant believes this reply is fully responsive to all outstanding issues and places this application in condition for allowance. If this belief is incorrect, or other issues arise, the Examiner is encouraged to contact the undersigned or his associates at the telephone number listed below. Please apply any charges not covered, or any credits, to Deposit Account 50-0591 (Reference Number 17170/014001).

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Respectfully submitted,

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